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How does agroforestry help crop pollination?

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Agroforestry practices can support native bees, honey bees, and other pollinators. Providing protection and habitat for pollinators can improve crop pollination.

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Virtually all agricultural crops require pollination, whether by insects, wind and/or through self-pollination. Producers who support insect pollinators can benefit economically from improved crop yield and quality from greater flower visitation and cross-pollination. Through agroforestry, producers can support pollinators while keeping the land productive. Agroforestry is especially helpful for providing habitat for diverse native bees, which provide the majority of pollination for many crops. This bee diversity provides pollination insurance when one or more species declines. While honey bee colonies can be transported from field to field for pollination, native pollinators depend completely on habitat adjacent to or within fields.

Some crops that benefit from insect pollination are:

Almond	Apple	Avocado	Blueberry
			
Cherry	Elderberry	Pawpaw	Peach
			
Raspberry	Squash	Strawberry	Tomato
			

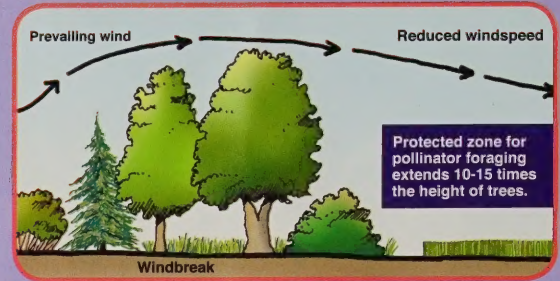
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If you rely on pollinators, agroforestry practices can provide several benefits:

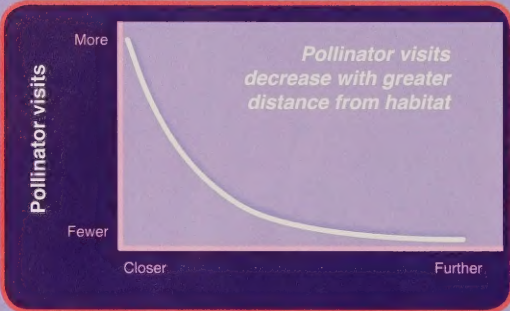
1. Enhanced pollination efficiency

Adding agroforestry practices that reduce wind speeds on the farm can increase pollination efficiency. Some pollinators, especially honey bees, stop pollinating when it gets too windy. Bees prefer to forage on the lee side of trees and windbreaks. Wind speeds can also influence pollination directly. For example, when the wind makes landing on a moving fruit blossom too difficult, bees may forage on the dandelion blossoms on the orchard floor where the wind is calmer.



2. Pollinator habitat

Windbreaks, riparian buffers, hedgerows, and alley cropping are all agroforestry practices that can provide vital pollinator habitat within or adjacent to farm fields. Research shows that the amount of pollinator habitat in agricultural landscapes has decreased, leading to reduced pollinator populations. Fewer untilled areas in the landscape means less nesting habitat and fewer pollen and nectar sources through the growing season. While a crop may only require pollinators for a couple of weeks, many of its pollinators likely need pollen and nectar both before and after the crop is in bloom. Distance between crops and pollinator habitat is also critical. Pollinator visits drop off as distance from habitat increases.



3. Pollinator protection

Agroforestry practices can reduce pollinator contact with pesticide drift from nearby fields. Trees and shrubs, especially evergreens, collect spray droplets and reduce drift. Windbreaks and hedgerows that protect pollinator nesting and colony habitat should either consist of species that don't attract pollinators or species that only bloom when pesticide spraying is unlikely.



For more information on pollinator conservation visit: <http://nac.unl.edu/issues/pollinators.htm>

Contact: USDA National Agroforestry Center, 402-437-5178 ext. 4011, fax 402-437-5712, 1945 N. 38th St., Lincoln, Nebraska 68583-0822. <http://nac.unl.edu>

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